## **APOLLO 7 40th Anniversary**

## Frontiers of Flight Museum Dallas, Texas 17 October 2008

## N. A. Armstrong

Some here will remember the height of the cold war. Many of you will not. It was a very dangerous time. Thousands of ballistic missiles armed with nuclear warheads created by the two superpowers and pointed toward each other. The ultimate in brinksmanship. A secondary competition between the same opponents developed, a race for preeminence in space. It attracted those with a big risk, big gain mentality.

Some of us came from the world of flight research, the in flight testing of new aircraft configurations, control systems, and flight techniques. Typically, our standard protocol was to take relatively small advances into unknown areas so we did not encounter or create situations from which we could not recover, a step by step approach.

When the new young President, Jack Kennedy, trying to find a way to compete with the Soviets in Space, asked the still young space agency, NASA, how it might be possible to beat them at something -- anything -- NASA answered: Nothing less than a manned flight to the surface of the moon, and that could not be certain.

The president decided to go with it -- a manned landing on the lunar surface and a safe return to Earth by the end of the decade. The public agreed, the congress agreed, and the ultimate heat of the space race was on.

Six years later, after gigantic rocket boosters and new spacecraft had been designed and built, and enormous assembly buildings and launch pads had been constructed., the first Apollo crew sat in their Apollo 1 spacecraft during a simulated countdown test when tragedy struck. A fire broke out in the cabin and the crew was trapped inside. Three of our friends and colleagues perished in the fire. Their backups, Wally Schirra, Walt Cunningham, and Donn Eisele, would be their replacement. They had been completely prepared to fly that original Apollo Command Module if it had been required. Now, that craft would never fly. Nor would one with its shortcomings ever be allowed to fly.

The spacecraft went through a major redesign that required a year and a half of work. But the new spacecraft, when completed, not only had eliminated the fire problems, but had been given time to include needed improvements in other systems.

The crew immersed themselves in the redesign and the development of the procedures for this new flying machine, the Block 2 Command Module. They were intimately involved in the testing of its systems, which always seemed to take place in the middle of the night.

It was now the autumn of 1968 and the United States was committed to reaching the surface of the moon by the end of the decade, and we hadn't flown yet.

In order to have any chance of meeting the deadline, each successive flight would be obligated to take the largest possible jumps. One step at a time would not get us there.

But in any new flying machine, the biggest jump of all is always the first flight. Among test pilots, the first flight is the big one -- the one when any design flaw or overlooked consequence is likely to reveal itself and cause major troubles. The crew is spring loaded to observe, identify, diagnose, and suggest corrective action for any unexpected abnormality.

But while a well executed flight is exciting and the proof of good work, it is those many months of design, development, and pre-flight preparation that are the part of the crew's responsibilities that are their actual principal contribution to the project's success.

All of us in the flights that followed were dependent on the Apollo 7 crew doing a great job, and they delivered, in the design, in the testing, and in flight, making it possible for the eventual Apollo goals to be achieved ... by the end of the decade.

So, thanks Walt......and Wally and Donn,